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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/873,978	06/12/1997	JON F. KAYYEM	A-63761-I/RF	2465

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EXAMINER

MARSCHEL, ARDIN H

ART UNIT	PAPER NUMBER
1631	33

DATE MAILED: 02/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No. <b>08/873,978</b>	Applicant(s) <b>Kayyem et al.</b>
Examiner <b>Ardin Marschel</b>	Art Unit <b>1631</b>



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1)  Responsive to communication(s) filed on Nov 20, 2001

2a)  This action is FINAL.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

4)  Claim(s) 47, 48, and 57-67 is/are pending in the application.

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 47 and 48 is/are allowed.

6)  Claim(s) 57, 58, and 60-67 is/are rejected.

7)  Claim(s) 59 is/are objected to.

8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.

12)  The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)  All b)  Some\* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- |   |  |
|---|--|
| 15) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) <del>8 sheets</del> sheets | 20) <input checked="" type="checkbox"/> Other: Attachment for PTO-948        |

Applicants' arguments, filed 11/20/01, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The instant claims include conductive oligomers as well as nucleoside analogs with metallocenes thereon in contrast to the present title which is only directed to electrodes linked to nucleic acids and electron transfer moieties.

Applicants are hereby notified that the required timing for the correction of drawings has changed. See the last 6 lines on the sheet which is attached entitled "Attachment for PTO-948 (Rev. 03/01 or earlier)". Applicants are required to submit drawing corrections within the time period set for responding to this Office action. It is noted that informal drawings have been filed. A cursory review of these drawings reveals margins that are too small, hand written and poorly formed numbering, etc. which clearly shows the informality of the drawings as filed. Failure to respond to this requirement may result in abandonment of the instant application or a notice of a failure to fully

respond to this Office action.

Claims 62-67 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amendments to claims 62 and 66 add NEW MATTER in that the content of the composition with these added components have not been found as filed. These amendments also add NEW MATTER by adding unclarity to the claims as noted in the below rejection. The pointed to citations on pages 33-34 have failed to reveal written description of the compositions, mixtures, etc. as now claimed without any structural limitations to connect the components in the claims. It is noted that specific covalent structures are shown on said pages 33-34 but no such covalent structures have been amended into claims 62 or 66. This rejection is necessitated by amendment.

Claims 62-67 are rejected, as discussed below, under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The amendments to claims 62 and 66 cause them to be vague and indefinite in that there is no citation as to what cooperativity exists between the added conductive oligomers and

the previous form of these claims. That is, are these compositions now mixtures, covalent structures, or non-covalent structures? What connects these added conductive oligomers to the previously claimed composition? Clarification via clearer claim wording is requested. This rejection is necessitated by amendment.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claim 57 is rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Marble et al. (P/N 5,700,667).

This rejection is maintained and reiterated from the previous office action, mailed 5/23/01. Applicants argue that the reference does not teach a conductive oligomer by citing a section from the specification at pages 16-17. It is firstly noted that, confusingly, the cited paragraph actually bridges pages 14-15 of the instant specification. It is noted that this section clearly indicates that double stranded nucleic acid is a conductive oligomer. It also defines such an oligomer as

permitting the rate of electron transfer to be faster than through a single stranded nucleic acid. Only, preferably, does the oligomer conduct faster than a double stranded nucleic acid. It is reasonably interpreted that embodiments of the instant invention include both preferable as well as non-preferable embodiments which thus is inclusive of double stranded nucleic acid as recited in the reference and is acknowledged to be a conductive oligomer. Applicants also argue that every element of the claim must be disclosed in an anticipating reference. In response it is noted that the claimed elements include a conductive oligomer covalently attached to a CPG-nucleoside which has been noted as disclosed in the reference except for the conductive character of double stranded nucleic acid. This conductiveness is a characteristic of double stranded nucleic acid and is an deemed inherent characteristic whether recognized by a particular reference or not. Inherent characteristics of compositions are deemed to be inherently carried with them whether measured, described, recognized, or not.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 62-65 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sargent et al. (P/N 5,601,982).

This rejection is reiterated and maintained from the previous office action, mailed 5/23/01, and as necessitated by amendment. It is noted that the reference discloses the metallocene or ferrocene labeled forms of both single and double stranded nucleic acids. PCR etc. are utilized as summarized in column 7, line 5, through column 9, line 22, wherein double stranded forms are present and may be analyzed as described in column 9, lines 17-22. As described in the above rejection a double stranded nucleic acid is reasonably interpreted as a conductive oligomer within the instant application definition thereof thus supporting this rejection also. Applicants argue that conductive oligomers are not described in Sargent et al. This argument has been responded to above in that double stranded nucleic acids are conductive oligomers within the instant

definition of them thus supporting this rejection.

Claims 58, 60, and 61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heller et al. (P/N 5,849,486).

This rejection is reiterated and maintained from the previous office action, mailed 5/23/01. Applicants argue that Heller et al. does not teach conductive oligomers nor a passivation layer comprising conductive oligomers. In response the double stranded nucleic acids wherein target and probe are complexed is a conductive oligomer as noted in the above two rejections thus making that argument non-persuasive. Regarding the passivation layer comprising a conductive oligomer, applicants are referred to their claim 58 wherein there is no limiting size or content as to what may be termed a monolayer passivation layer comprising a conductive oligomer. Thus, the Heller et al. passivation layer "with" the attached double stranded nucleic acid is a monolayer which contains the passivation layer comprising a nucleic acid which is double stranded and conductive. Applicants then argue that the conductive oligomer can have a structure such as depicted in their REMARKS on page 7. This is also non-persuasive because the instant claims do not contain any such structural limitation and thus are much broader as to what is meant by a conductive oligomer to include double stranded nucleic acids. Thus the rejection is still deemed proper.

The following U.S. Patent applications are hereby made of record as having been considered as listed in the IDS, filed 6/25/01: 08/743,798; 08/899,510; 08/911,085; 09/557,577; 09/577,429; 08/166,036; 08/475,051; 08/660,534; 08/659,987; 08/709,265; 08/709,263; 08/873,598; 08/946,679; 09/100,507; 09/306,749; 09/306,737; 09/306,768; 09/454,498; 09/459,751; 09/459,191; 09/454,497; 09/458,187; 09/545,227; 09/602,618; 08/312,388, 08/786,187; 09/296,111; 09/296,078; 08/786,153; 08/804,883; and 08/843,623.

Claims 59 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 47 and 48 are allowed.

Applicants' amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703)308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703)308-3894. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703)308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst, Tina Plunkett, whose telephone number is (703)305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

February 22, 2002

*Ardin H. Marschel*  
ARDIN H. MARSCHEL  
PRIMARY EXAMINER

**Attachment for PTO-948 (Rev. 03/01, or earlier)**  
**6/18/01**

**The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.**

**INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

**1. Correction of Informalities -- 37 CFR 1.85**

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

**2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.**

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

**Timing of Corrections**

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.